NEWSLETTER

Of The
Arboretum of The Barnes Foundation

MERION, PENNSYLVANIA 19066 NUMBER 21: SEPTEMBER 1978

A Visit to Iceland and Greenland

JOHN M. FOGG, JR.

Although several circumstances combined to prevent the scheduling of a regular Arboretum Tour in the spring of 1978, a small group of us elected to pay a 17-day visit to Iceland and Greenland.

We left Kennedy Airport on the evening of Tuesday, June 27, and arrived in Reykjavik, the capital of Iceland, late the following forenoon.

After lunch we wandered around the streets adjoining our hotel and were at once impressed by the incredible neatness and cleanliness of the houses and everything about them. (Fig. 1).

The "Smokeless City," as it styles itself, is indeed just that, because, being heated by subterranean thermal sources, there is no need for coal, gas or oil. The only "smoke" one sees is, in reality, nothing but steam, which was noted by the first visitors to the island who long ago gave the name Reykjavik (meaning "Smoking Bay") to the city in which we now found ourselves.

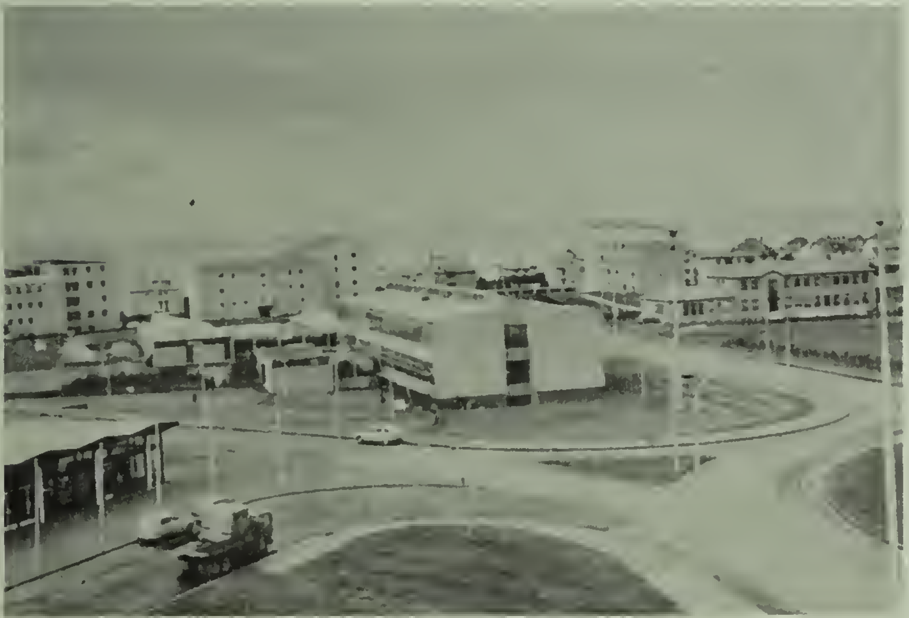

Fig. 1 View of Reykjavik from Hotel Saga

Fig. 2. Typical Iceland scenery

No house is in need of paint and the lavish use of primary colors, red, blue and yellow, makes this a city of enchantment. We were so close to the Arctic Circle that the sun never really seemed to set and I took a picture of the city from our hotel at 11 p.m.!

The first thing that impresses a botanist in this country is the almost total lack of trees. There are really only two species which ever achieve arboreal dimensions, and these do so mainly in protected situations. One is the European mountain ash or rowan *(Sorbus aucuparia)* and the other is a birch *(Betula pubescens)*. The only conifer indigenous to Iceland is a prostrate juniper *(Juniperus communis* var. *nana)*.

It is always entertaining to peer into people's gardens to see what they are growing. Here, in addition to the familiar columbines, lupins, poppies and tulips, were many more exotic and unusual plants. Chief among these, perhaps,

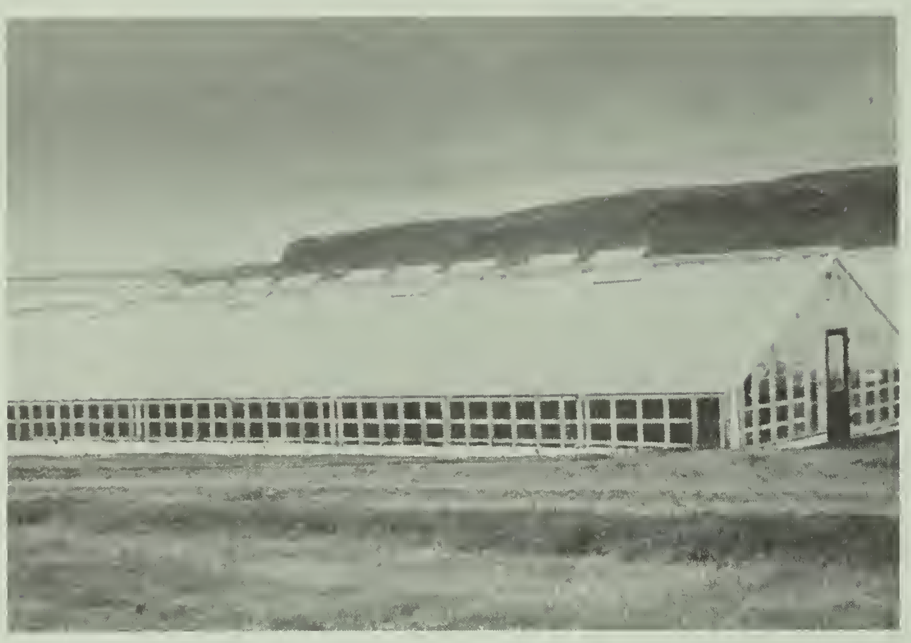

Fig. 3. Thermally heated greenhouses at Hveragerdi

was the magnificent blue poppy *(Meconopsis)* from the Himalayas. A double-flowered globe-flower *(Trollius)* seemed a great favorite, as did its relative, the marsh marigold *(Caltha palustris).* A number of gardens displayed shooting-stars *(Dodecatheon)* of several different kinds, while saxifrages, many of them indigenous, were present in a confusing array of species. This brief list should also include leopard's-bane *(Doronicum),* avens *(Geum coccineum),* sea-thrift *(Armeria)* and common valerian *(Valeriana officinalis).* Somewhat surprising was to see here *(Dicentra eximia),* the little "bleeding heart," native to our southeastern Appalachian states.

Several of the householders invited us in for a closer look at their gardens and to chat about their treasures. This was the first of many examples of the hospitality of these friendly northern island people. Here, and throughout our stay, we were deeply impressed by the dignity and independence of spirit of the inhabitants of this far northern outpost in the Atlantic Ocean.

On the morning of Thursday, June 29, we set forth on our ten-day motorcoach tour of the island. Although Iceland is often thought of as a place of perpetual ice and snow, that concept better applies to Greenland, far off to the west. It is true that there is plenty of ice in Iceland; indeed it includes several noteworthy glaciers, but much of the island is clothed in verdant meadows (making sheep-rearing one of its major industries) or covered with limitless flat fields of well-weathered lava, usually reduced to a grey-green color by growths of lichens or mosses.

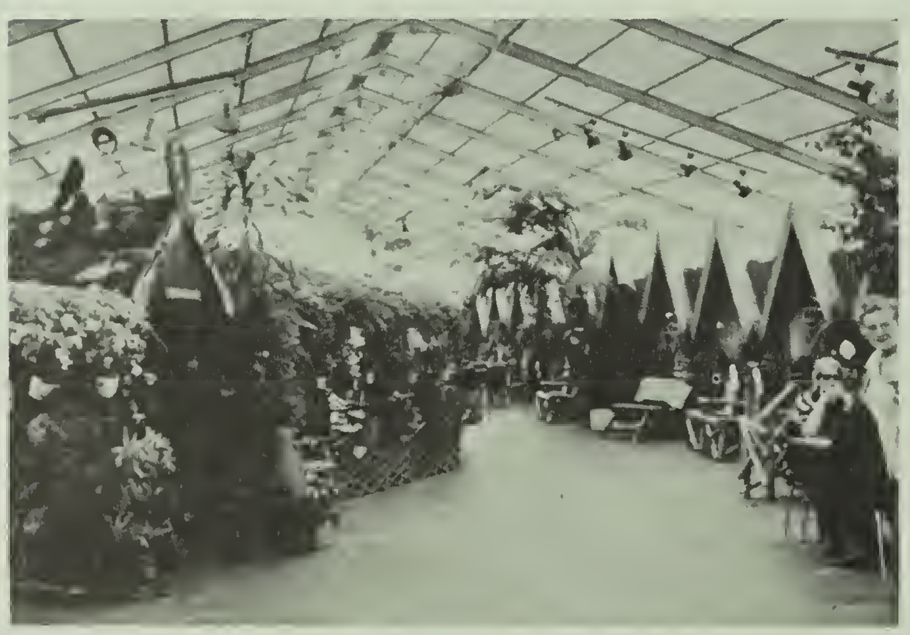

Fig. 4. Eden. Country mall at Hveragerdi

During our tour we saw a score or more of volcanoes (all fortunately extinct at present), thousands of square miles of lava (most of it now cold), numerous geysers and hot springs and at least half a dozen glaciers, one of them (Vatnajokull) being the largest in Europe.

We had seen many spectacular waterfalls on our travels, but as one member of our party remarked, "Iceland must certainly be considered as the Waterfall Capital of the World."

Examples of most of the features mentioned above will be more fully described in the narrative which follows, but no words of mine can begin to do justice to the grandeur of the scenery, with mountains dotted or capped with snow, surrounding us on nearly all sides, and geysers, waterfalls and fiords thrown in for good measure (Fig. 2).

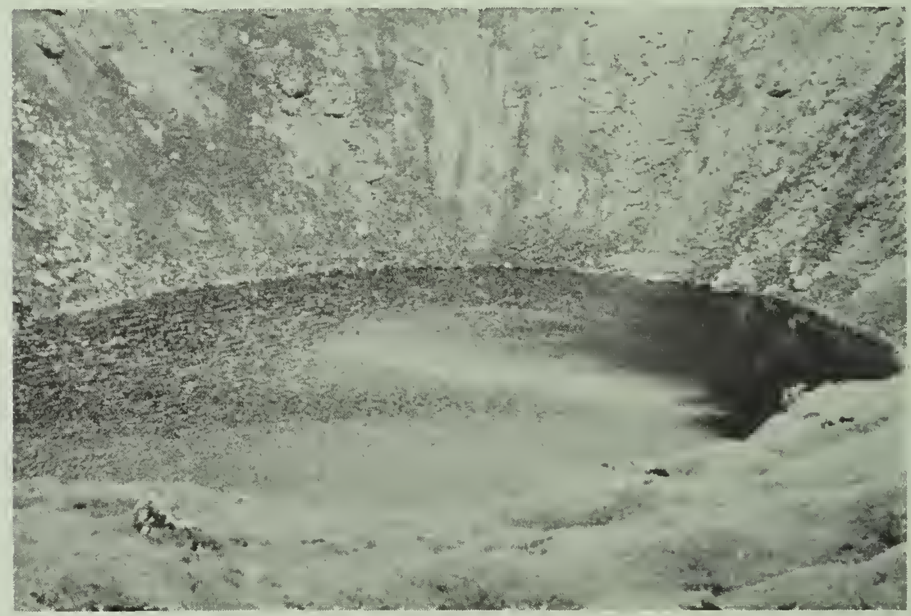

Fig. 5. Extinct crater of Skalholt

A few words seem in order here about most of the hosteleries where we stopped during the course of this excursion. All but two of these are used as student dormitories during the school year, but are converted into hotels during the tourist season. Each one is known as "Hotel Edda" and all of the china-ware, bedroom linen, etc., bear that inscription. The rooms, although not large, contain comfortable beds, good storage space and a washstand.

The breakfasts, like those elsewhere in Scandinavia, were enormous, and the other two meals were composed largely of fried fish which we found delicious. Indeed, one member of our group, who had long boasted that he could eat fish seven days a week, here finally achieved his ambition.

Our traveling companions, many of Icelandic descent, were a very congenial group and included quite a few Canadians, some Bostonians, several Californians, a Norwegian pianist (who played beautifully for us on a number of occasions), an Austrian father and son and a British physician, who swore, by the time the tour was over, that he was going to devote the rest of his life to the study of botany and geology.

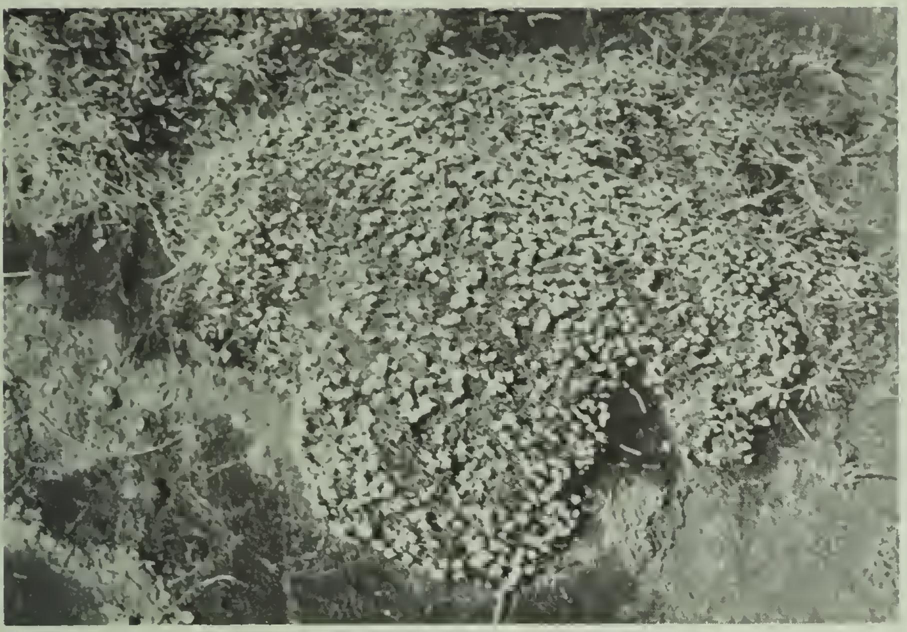

Fig. 6. *Silene acaulis.* Moss campion

Our guide was a sweet, rosy-cheeked, tousel-headed blonde, named Maria, who admitted that she had never led a tour before, but turned out to be amazingly competent and possessed of a great sense of humor and an immense supply of knowledge and stories.

Our itinerary that first day took us across the Hellisheidi plateau to Hveragerdi, a village of greenhouses heated solely by natural thermal springs. (Fig. 3). Although most of these units are devoted to growing fruits and vegetables for local consumption (bananas, coffee, grapes, peppers, citrus fruits and avocados), the one in which we spent a pleasant hour or so was more for the display of tropical or sub-tropical ornamental plants. Here we saw *Brunfelsia, Passiflora,* several aroids, e.g. *Anthurium* and *Spathiphyllum,* and even a number of cacti, mostly of the cereoid type.

In a nearby country mall which called itself "Eden" (also heated by hot springs) there was a profusion of tuberous begonias and gloxinias *(Sinningia)* and thousands upon thousands of small potted specimens of a wide variety, among them numerous cacti and other succulents. We were beginning to realize that most Icelanders seem to love plants, either outdoors in their front-yard gardens or indoors in their homes, probably to brighten their long winter nights. (Fig. 4).

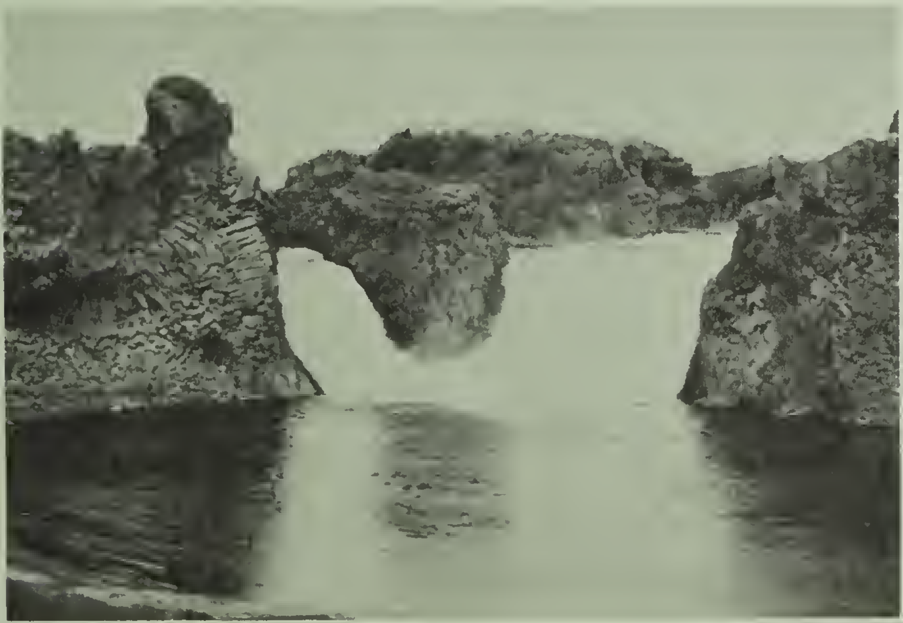

Fig. 7. Hjalpar. The Double Falls

We next drove to Skalholt, the crator of an extinct volcano. (Fig. 5). En route we had our first, and almost last, view of Mt. Hekla. At nearly 5000 feet, this is Iceland's most famous landmark. Its latest eruption was in 1970, at which time it emitted several different kinds of lavas. Unfortunately its top was shrouded in clouds and we never then or later caught a view of its majestic summit.

It was on the lava-encrusted cone of Skalholt that we first started seeing those arctic species of plants which are so fascinating to the botanist from the temperate areas. Here were prostrate mats of a dwarf willow *(Salix herbacea),* not truly herbaceous, but given that name over two centuries ago by Linnaeus. Accompanying the willow was a dwarf birch *(Betula nana),* which we were to see everywhere from then on. Here, to our delight, were many pink-flowered cushions of the moss campion *(Silene acaulis).* (Fig. 6). Two species of lady's mantle *(Alchemilla alpina* and *A. vulgaris)* were ubiquitous, as was our old friend bearberry *(Arctostaphylos uva-ursi),* apparently identical with the plant of the New Jersey Pine Barrens. The insectivorous butterwort *(Pinguicula)* is always intriguing, and the one we were seeing here *(P. vulgaris)* resembled a tiny violet with its lavender-blue flowers. Finally, mention should be made of the alpine bistort *(Polygonum Bistorta)* and the mountain cranberry *(Vaccinium Vitis-Idaea);* this is the Old World var. *major.* Both are species of high latitudes.

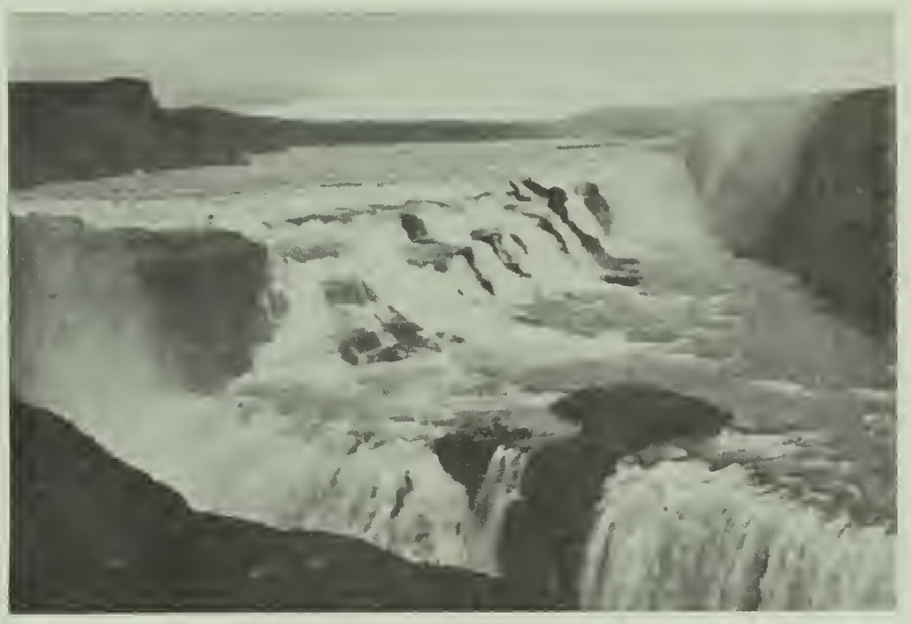

Fig. 8. Gulfoss. The Golden Falls

At this juncture it is appropriate to report that it was our great good fortune to have with us a copy of the *Islenzik Ferdaflora,* written by my friend, Askell Löve. Although in Icelandic, this work is fully illustrated by color plates and line drawings and the plant names are, of course, in Latin. Without this valuable reference work we might have been hard put to identify some of the plants which we found.

Following an excellent lunch (of fish and boiled potatoes) we drove across an area of tundra to visit the Gjarfoss waterfalls. Here, in addition to the species we had seen earlier was the mountain avens *(Dryas octopetala),* that attractive member of the Rosaceae, in great profusion. Here

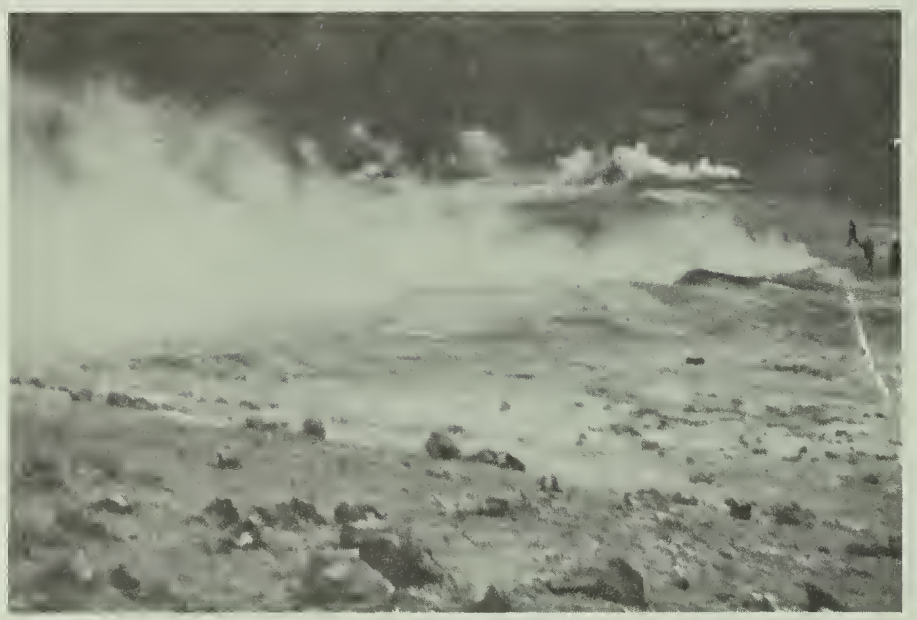

Fig. 9. Valley of the Great Geysir

were *Lycopodium alpinum* and *Vaccinium uliginosum,* both of which we had seen in Norway on our Scandinavian tour. Here, also, was the tiniest of all meadow-rues *(Thalictrum alpinum),* its stalks seldom taller than four inches. The moonworts or grapeferns are always intriguing and here for the first time we found one of the smallest of them all *(Botrychium Lunaria).* Later we were to see it forming practically a solid turf. We were puzzled at first by seeing frequent mats of a prostrate plant with rose-purple flowers. Close inspection proved it to be a species of thyme and with the aid of Löve's book we identified it as *Thymus praecox,* probably the variety *arctica.* Even more intriguing was a minute monocot with flowering scapes only a few inches tall. This was *Tofieldia pusilla,* a member of the same genus as the bog asphodel of the New Jersey Pine Barrens. We were pleased to find here, also, mountain-sorrel *(Oxyria digyna).* This plant possesses anti-scorbutic properties which have played an important role in reducing the incidence of scurvy among sailors in the early days of exploration in the north Atlantic.

We next went to view the ruins of a Viking farm-house which had been destroyed by an eruption of Hekla in the 11th century. It had been constructed largely of blocks of peat-moss and contained several rooms. The light was too dim for anything but flash photos, yet the fragile bladder fern *(Cystopteris fragilis)* was growing out of every nook and cranny.

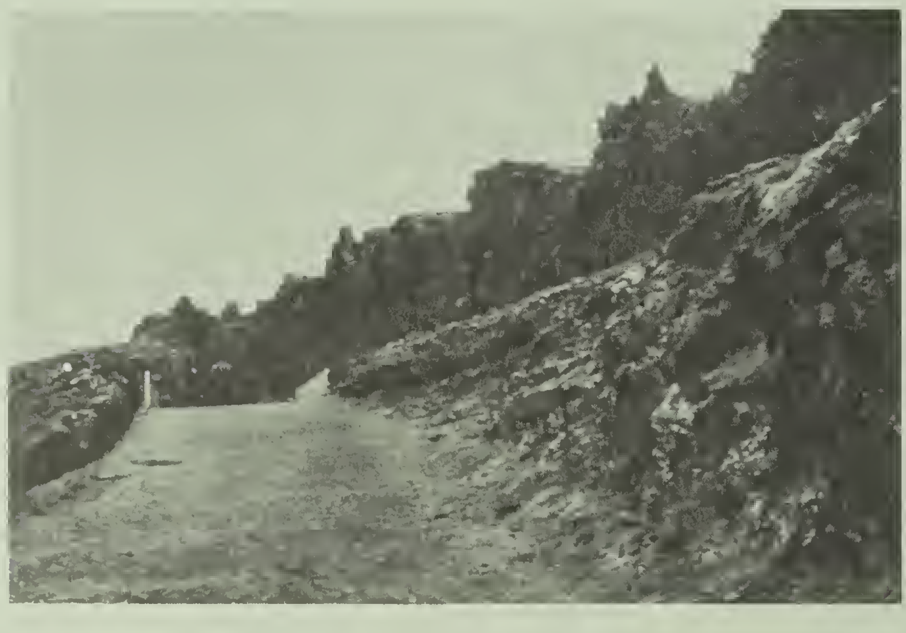

Fig. 10. Thingvellir National Park

As if to make good our impression concerning waterfalls, our final stop of the day was to view the double falls at Hjalpar (Fig. 7). Of botanical interest here were *Viola palustris, Geum rivale* and *Potentilla anserina.* That night was spent in our first Hotel Edda at Laugarvtan, a popular summer resort.

The next day provided an introduction to one of Iceland's many areas of intense thermal activity. First, however, we stopped to view the Gulfoss or Golden Waterfalls, one of the island's finest showpieces, greatly beloved of artists and photographers (Fig. 8).

The Great Geysir is, or was, the principal attraction in the thermal area to which we went next. Today it is dormant, but one of its associates, named Strokkur, is very active, erupting right on time every thirty minutes. We stood at a respectful distance to watch it perform. Please note that whereas the Great Geysir is spelled with an "i", all ordinary geysers, deriving their names from this one, use the "e". At least so we were told.

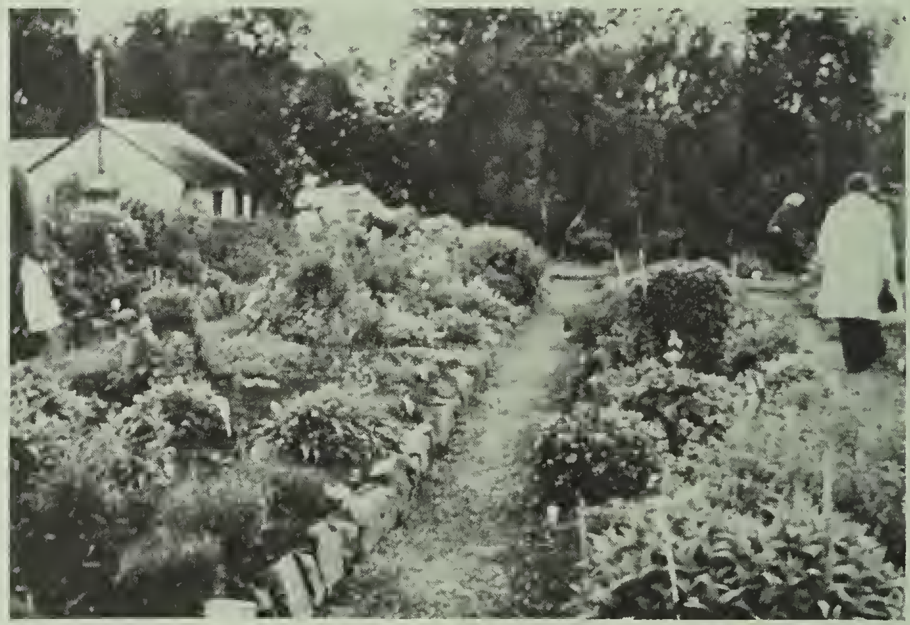

Fig. 11. Botanical Garden at Akureyri

All around us were hot springs, boiling pools, fumaroles and erupting spouts in a wide variety of sizes and activities. Our girl guide warned us to keep to the well-marked trails, saying that visitors had been known to lose their feet by wandering astray. "Strange the travel literature makes no mention of this," someone remarked. (Fig. 9).

We returned to our hotel for lunch and in the afternoon drove across lava to the most historic spot in Iceland. This is the arena known as Thingvellir where for centuries the ancient Viking Parliament, or Althing, held its sessions in the open. (Fig. 10).

As we wandered about the area, which is now a national park, we observed, among other plants, the following: a beautiful blue-flowered geranium *(G. sylvaticum),* a handsome "chickweed" *(Cerastium alpinum),* a "bedstraw" *(Galium verum)* and a yellow-flowered rhinanthus *(R. minor).* This member of the Scrophulariaceae is a root parasite, a piece of information which greatly dismayed several members of our party who desired to take seeds of it home to their gardens.

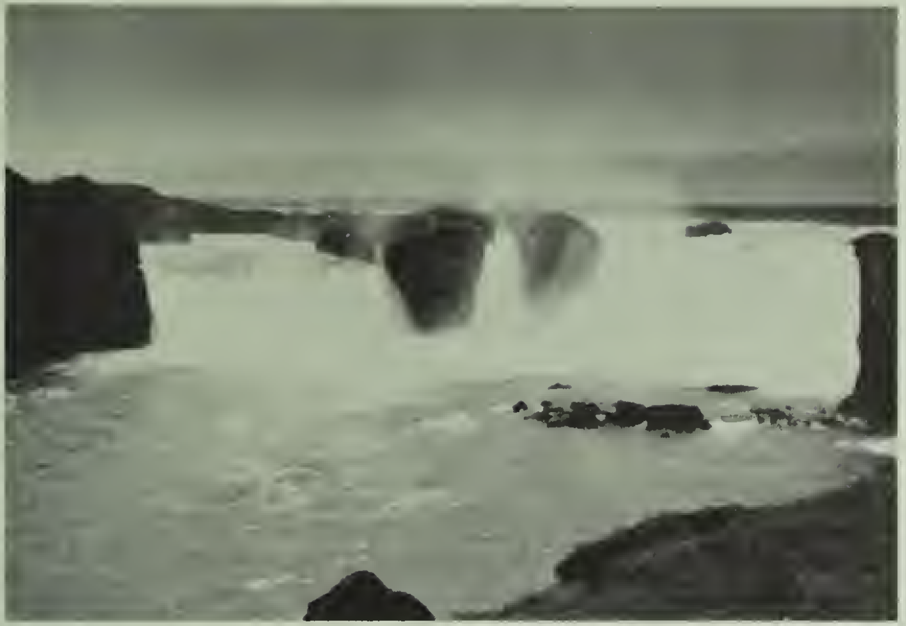

Fig. 12. Godafoss. Waterfalls of the Gods

We were by no means finished with waterfalls and our final stop of the day was to admire Hraunfossar. This is distinguished not by its height but rather by its length, which is something like a quarter of a mile. That night we stopped at Borganes, located on the Borgarfjordur.

On Saturday, July 1, we drove for many miles in a northerly direction across an undulating plateau where lush fields of grass, occupied by grazing sheep, alternated with vast areas of weathered lava which, we were told, was some 3000 years old.

Then for a considerable distance we drove along the east side of Hrutafjordur. Although the jagged coastline of Iceland is indented by some 40 fiords this was the first one we had seen at close range.

Following lunch at Blondous we visited an 18th century church at Vidimyri and a folk museum in a turf farmhouse at Glaumbaer. There was little, if any, of botanizing that day, but there were numerous compensations. Late that afternoon we put in at Akureyri, on the north coast, the second largest city in Iceland, a picturesque town at the head of the Eyjafiord.

Fortunately for some of us, the following morning was at leisure and we took advantage of that fact to visit the botanic garden, which had been established in 1912 and which we had been told we should not miss. I had written ahead to the director telling of our wish to visit the garden even though it was a Sunday.

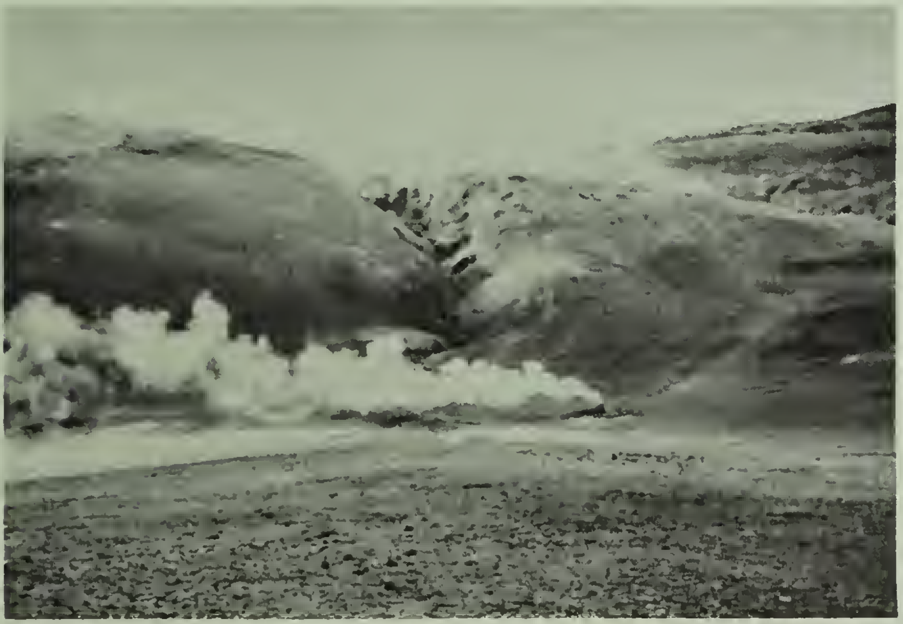

Fig. 13. Sulphur pits at Namaskard

We are therefore extremely grateful to Dr. Johann Pálsson, the present head, for having given up a free morning to join us in the garden and show us around.

Understandably, the garden is not rich in woody plants, although birch and several conifers (pine, spruce and larch) have been established as a windbreak. However the number and variety of perennial species is simply astounding in an area of only about eight acres (Fig. 11). Many of the plants are arranged according to families and genera and nearly all are labeled. It was extremely helpful to see so many species of one genus, e.g. *Saxifraga,* together and be able to check our field determinations. The same was true of other genera, such as *Sedum, Cerastium, Ranunculus,* etc. This is certainly one of the most important functions a botanical garden has to perform and that objective was achieved here with real distinction.

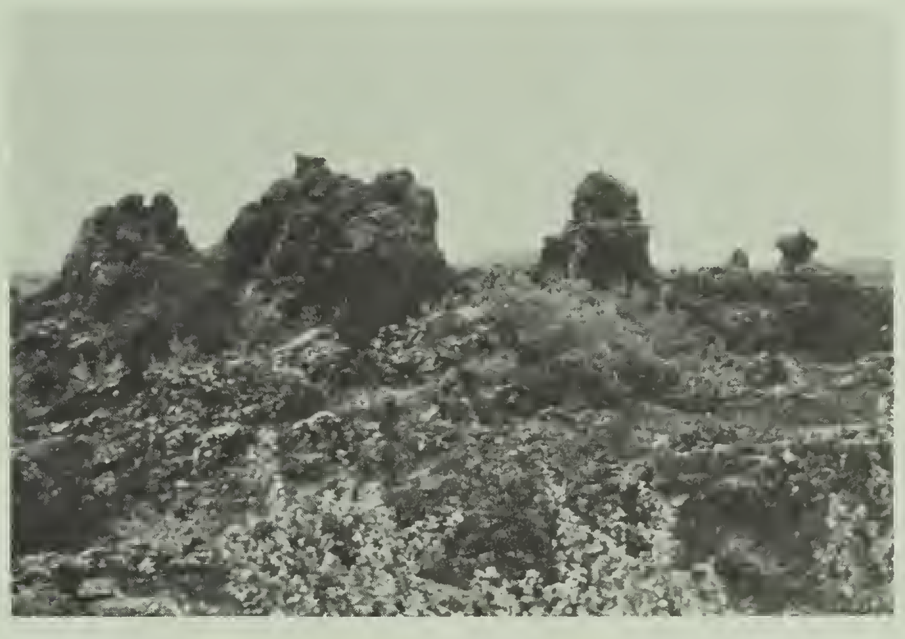

Fig. 14. Dimmuborgir. The Dark Citadels

Dr. Pálsson showed us a section devoted solely to plants native to Iceland, another to Cryptogams, still another to aquatic plants and so on. We were pleased to see again *Meconopsis,* which is seemingly quite hardy here, several species of *Lewisia* from western North America, and, again, our own southeastern *Dicentra eximia.* There was a long hedge of a willow with tomentose leaves, which we had been seeing everywhere and Dr. Pálsson confirmed our guess that it was *Salix lantana* (willows are seldom easy to identify). Altogether it was indeed a memorable morning.

After lunch we visited the Folksmuseum Minjasafnid, which contains an extensive collection of household furniture. Nearby was the home of the priest and author Sveinsson) whose books for children, written under the name Nonni, were translated into many languages.

We then drove across Vadlaheidi plateau to pay tribute to Godafoss, the Waterfall of the gods, another impressive, and in this case double fall separated by gigantic masses of basalt (Fig. 12). That night and the one following we were quartered at Husavik, a very attractive town, on the north coast of the island.

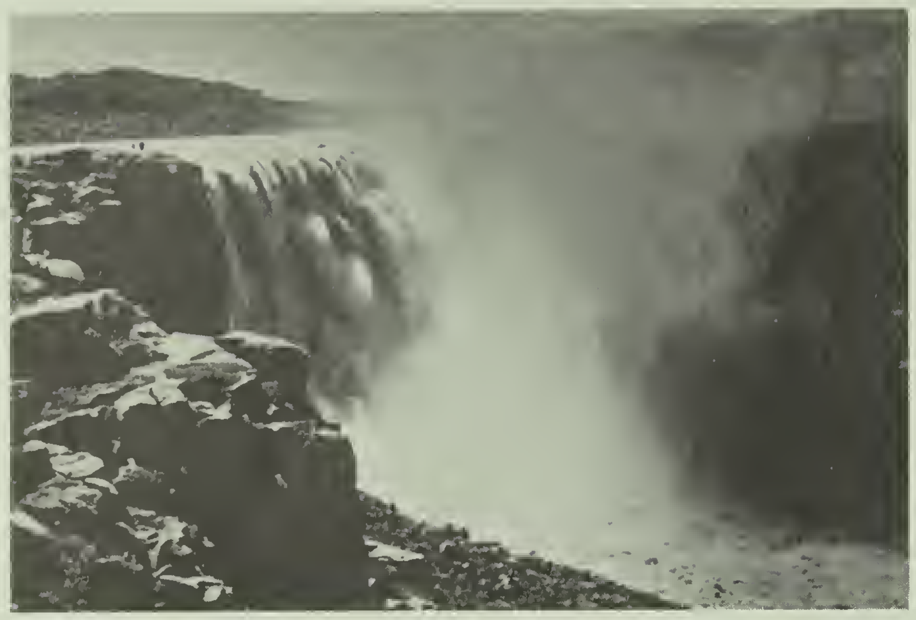

Fig. 15. Dettifoss

On Monday, July 3, our itinerary called for a "full day of sight-seeing in the vicinity of Lake Myvatn". Our first appointment that morning was with another fabulous area of boiling sulphur pits known as Namaskard (Fig. 13). Since these were essentially similar to those previously described at the Great Geysir, our space may be better reserved to include a few lines concerning Dimmuborgir (the Dark Citadels),a region of weird volcanic formations which might well have served as the inspiration for the illustrations in Dante's "Inferno" (Fig. 14).

As we clambered down the ill-defined trail which led us into the central theater of this formation we found several fascinating Arctic species which had up to this time eluded us. The two most exciting were *Loiseleuria procumbens* and *Diapensia lapponica.* But here, also, which we had not seen before, were showy patches of *Silene vulgaris* and the prostrate juniper mentioned earlier. This was one of the very few times that we saw bell heather *(Calluna vulgaris).* We returned that night to our hotel in Husavik.

The following day we drove around the Tjornes peninsula, with occasional views of the sea on our left, and into Asbyrgi, a horse-shoe shaped canyon rimmed by massive basaltic cliffs. It was here that we discovered *Pyrola secunda* and *P. minor,* as well as an orchid which we took to be *Habenria maculata* var. *islandica.* This day's waterfall was Dettifoss, said to be the mightiest in Europe (Fig. 15). We then continued in a southeasterly direction through barren highland areas to Eidar, where we spent the night.

The next morning, July 5, was at leisure and we walked for several miles across country characterized by granitic outcrops and many dwarf willows and birches. That afternoon we drove over winding mountain roads to Seydisfjordur, a picturesque fishing village on the east coast. We entered one of the shipping sheds and peered through a glass cage at the white-clad attendants packing fish for shipment. We were back in Eidar that night.

The region around Eidar provided several novelties, among which were included *Viscaria alpina* (a handsome pink with a basal rosette of narrow leaves), *Erigeron uniflora, Gentiana detonsa* (a minute gentian with both blue and white flowers), *Vicia sepium* and *Parnassia obtusifolia* (this last was Perot Walker's discovery). We had been wondering why we had not seen the common harebell of northern Europe *(Campanula rotundifolia).* It put in an appearance here and was of frequent occurrence from then on. One of the most exciting finds on the entire tour was a small patch of *Cassiope hypnoides,* one of the rarest of ericads. We saw it here but, unlike the harebell, never found it again.

According to the law of diminishing returns one cannot go on forever discovering new plants, even in Iceland. The next day, however, was not entirely lacking in botanical interest. We went first to visit an extensive reforestation project where thousands of trees were set out in well-tended nursery beds. They were in various stages of development, some one-year seedlings, others three or four feet tall and ready for out-planting. Although the emphasis was on conifers (pine, spruce, fir and larch) there were birches, mountain ash and several species of willows.

The question naturally arose as to why Iceland is today essentially treeless. One theory maintains that it was once heavily forested, but that when the woods were cut and sheep introduced it was impossible for trees to re-establish themselves. If so, this is comparable to the situation which exists in Ireland, which before the advent of sheep is believed to have been heavily wooded.

It seems to some of us, however, that there is another possible explanation: in the first place, the climate is extremely harsh with a short growing season and winds of high velocity. Then, too, even in places where the lava has weathered to form a soil mantle the ground may be permanently frozen a few inches beneath the surface (permafrost).

At any rate, it was certainly encouraging to visit this operation and see so many thousands of young trees being raised for purposes of reforestation.

After leaving here we drove south, stopping at one point to purchase minerals from boys who operated a roadside stand. Rhyolite (an igneous silicate rock) is common hereabouts and it comes in a variety of colors. Most exciting were speciments of one of the zeolites with acicular crystals.

Lunch that day was at Heydlin, where we saw Iceland's only native currant *(Ribes rubrum),* and we then continued southward, skirting the heads of several fiords before arriving at our quarters for the night at Hofn.

The following day, July 7, we headed in a southwesterly direction passing several glaciers which emanate from Vatnojokull, Europe's largest icecap. Twice we left the main road for closeup views of the work of this vast ice-sheet.

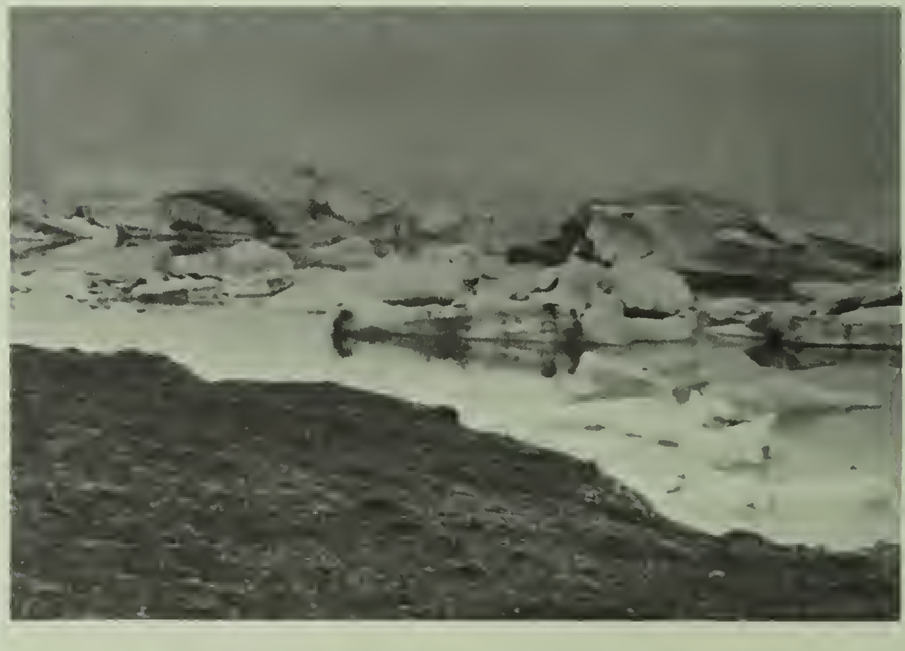

Fig. 16. Floating ice in small fiord

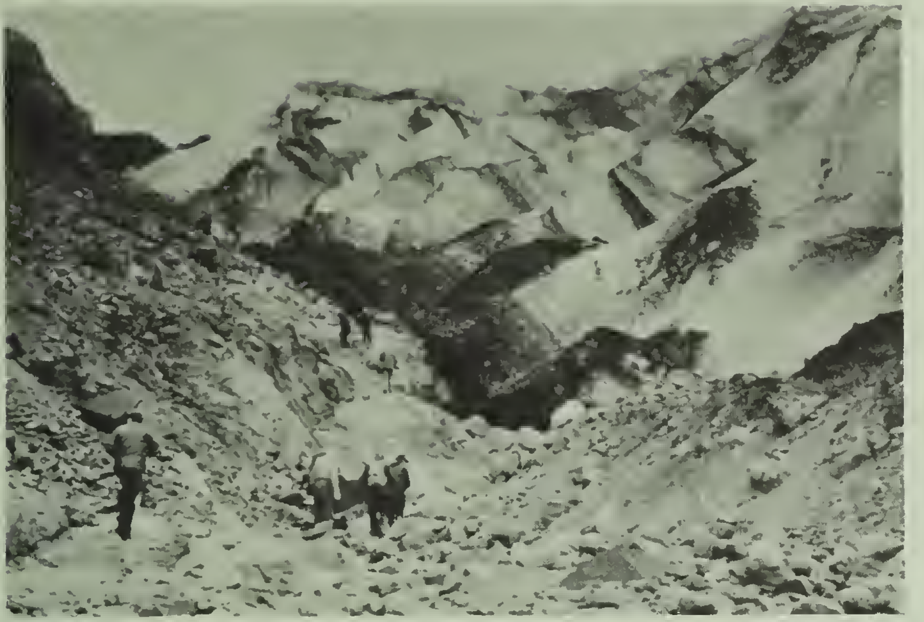

Fig. 17. Tongue of Vatnajokull Glacier

The first diversion was up a small fiord to see chunks of floating ice which had become detached from the glacial front. Had those of us who were planning to go to Greenland known what we were to see there, we never would have given this a moment's attention. But at that point in our travels this was well worth a stop and a photo or two (Fig. 16).

Our second visit was far more worth-while, for after having clambered over a vast field of morainal rubble, we were finally able to come face to face with a real live glacier and pat it on its dirty nose (Fig. 17). I say "dirty" because this tongue of ice had passed over a field of black, powdery glacial lava and had gotten its surface besmirched in so doing. Glaciers, incidentally, cover about one tenth of Iceland's surface.

We then continued westward, along the south coast of the island, traversing what we were told is, by all odds, the largest lava flow in the world, 35 miles long by 12 miles in width.

Late that afternoon we stopped at Dyrholaey to see its striking rock formation with its colonies of nesting sea-birds. This locality reminded all of us of Percé, off the Gaspé peninsula (Fig. 18). Perot Walker, our party's private ornithologist (as well as, along with his wife Susie, a highly competent botanist) informed us that the birds which were nesting by thousands here were mostly fulmars, murres and a few greater skuas.

Sleeping accomodations that night were at Skogar, on the south coast of the island, not far from another impressive glacier.

On the final day of our bus tour (Saturday, July 8) we left Skogar after breakfast and continued westward along the south coast where, had the weather been finer, we could have caught views of the glaciers to the north of us. We did stop once and that was to bid farewell to Seljalandfoss, our last Icelandic waterfall. We were back in our hotel in Reykjavik late that afternoon.

To attempt to sum it all up: we had spent ten days in a country of great natural beauty, stupendous scenic variety, marvelous manifestations of nature's handiwork (geysers, hot springs, volcanoes, glaciers, etc.) and, for those botanically inclined, a comprehensive representation of a fascinating circumboreal flora.

Sunday morning, July 9, was devoted largely to shopping, Iceland's woolen goods: sweaters, scarves, gloves, etc. are among the best in the world, a fact of which the members of our party were not unaware.

At noon that day we flew across to Haemey (pronounced Haymay) the largest of the Vestmann Island group just off the south coast of Iceland. It was in this small island that its only center of population, the fishing village of Vestmannaeyjar was all but totally destroyed by the eruption of the volcano Kirkjufell in January 1973. Yet this town's 5000 inhabitants were all evacuated to the mainland without a single casualty.

We were met at the airport by a young driver, whose English was perfect, as is that of most Icelanders, who took us on to the crater (or at least one of them) whence the main lava flows originated (Fig. 19). Here we were nearly blown off our feet by winds of incredible velocity. We picked up chunks of lava which were still too hot to hold and were shown houses that were half-buried by the advancing flow of red-hot magmas, which were popping off bombs and fireworks a short distance away (Fig. 20).

One of the greatest dangers during this eruption was that the advancing lava front would close the mouth of the harbor, the city's main life-line to the mainland. This catastrophe was averted by the superhuman efforts of a group of volunteers who, with hoses, poured 59,000 tons of sea water per hour into the maw of the threatening lava front (Fig. 21). The eruption lasted from January until May and half the town was submerged in lava, while the rest was covered with thick layers of ash. The dramatic story of this eruption has been well described and colorfully illustrated in the National Geographic Magazine for July 1973 (Vol. 144, No. 1).

The last stop on our island tour was at the edge of a fiord, on the opposite side of which were sheer jagged cliffs affording nesting places for thousands of sea-birds. Here, according to Perot Walker, in addition to murres and fulmars were a few puffins, those amazing birds with white breasts, red legs and large red and blue bills. Perot's list of birds seen in Iceland contains 35 species, which, in view of the fact that we were almost constantly on the move, seems an eminently respectable number.

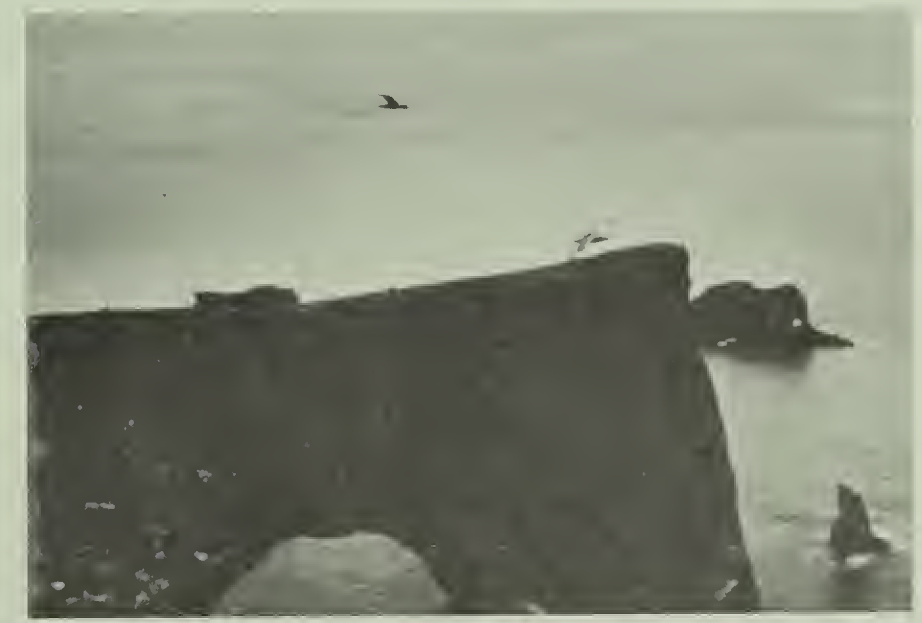

Fig. 18. Dyrholaey. *Photo by Elizabeth C. Walker*

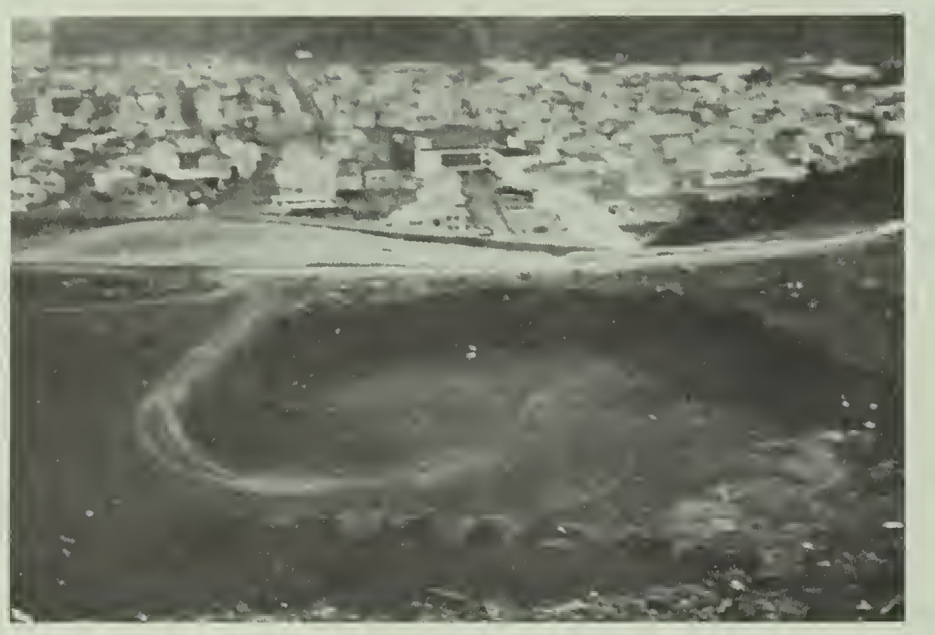

Fig. 19. Vestmannaeyjar from crater at Kirkjufell

There is a good little restaurant in Vestmannaeyjar and an aquarium which has a collection not only of fish and other marine forms of life, but also mounted specimens of birds and mammals. By dinner time that day we were back at our hotel in Reykjavik.

The following morning (July 10) we participated in a city sight-seeing tour which took us, among other places, to the National Museum, the Arbaer Folk Museum, an outdoor swimming pool heated by natural hot water and the studio of Iceland's eminent sculptor, Asmunder Sveinsson.

That afternoon several of us walked from our hotel to visit the Botanic Garden, where Dr. Sigurdur A. Jonsson, the director, graciously received us and showed us around. He led us first into the greenhouses, where there was an enormous amount of fascinating plant material. In addition to a large collection of tender or house-plants (including many cacti and other succulents) there was a wide variety of woody material including such genera as *Cotoneaster, Lonicera, Hedera, Cephalanthus* and *Juglans.* When we asked Dr. Jonsson about these plants he informed us that it was his intention to set them out on the grounds in order to ascertain whether they would survive Iceland's severe climate. Since one of a garden's most important functions is to test plants for hardiness we found this most commendable.

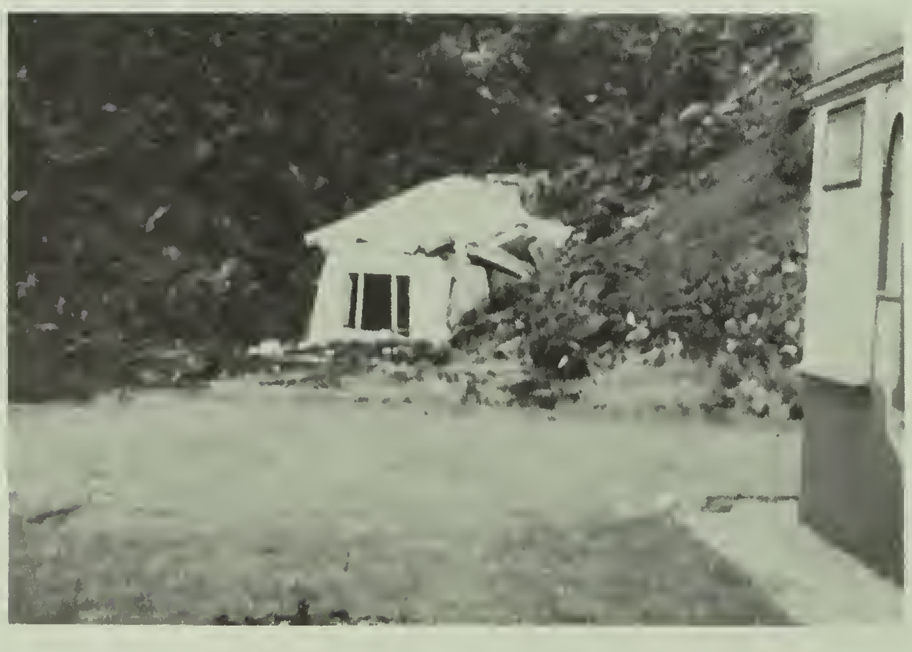

Fig. 20. Vestmannaeyjar. House destroyed by lava flow

The outdoor garden is divided into two rectangular areas and was somewhat like the one at Akureyri in that the plants were set out in rows and well labeled. The garden is incredibly rich in perennials many of which we were surprised to see flourishing at this latitude. Of *Dodecatheon,* for example, there were four species *(Cusickii, Hendersonii, macrocarpon* and *Meadia)* (Fig. 22). There were, as might be expected, countless species of *Saxifraga* and such genera as *Aquilegia, Campanula, Delphinium, Mimulus, Potentilla, Sedum, Spiraea* and *Thalictrum* were represented by a wide variety of forms. The number of composites, many of them unfamiliar to us, was simply overwhelming.

Since the afternoon had been overcast, with occasional drizzles, several of us returned to the garden the following morning for a second look and to take pictures.

Later that day we flew from Reykjavik to Greenland to experience the excitement of a part of the world which is still in the Ice Age or Pleistocene. Our flight took us across Greenland's ice-cap which is hundreds, and in many places, thousands, of feet thick and since the visibility was perfect we were able to photograph the rocky pinnacles which protrude above the ice. These are known by the Eskimo names of nunataks (Fig. 23).

Fig. 21. Vestmannaeyjar. Entrance to harbor.

Our destination was Narssarssuaq, a small base located at the foot of a glacier on the fimbriated southwest coast of the world's largest island.

Soon after arrival at the very comfortable Arctic Hotel, we set out to explore the nearby glaciated hillslope. There is considerable similarity among the components of our circumboreal flora and many of the plants growing here were the same as the ones we had seen in Iceland. There were, however, several novelties. Chief among them was the so-called river-beauty *(Epilobium latifolum)* gloriously in bloom on all sides with its showy purple or roseate corollas. Abundant were a fringed orchid, which we took to be *Habenaria hyperborea,* a purple-flowered *Rhinanthus,* another butter-

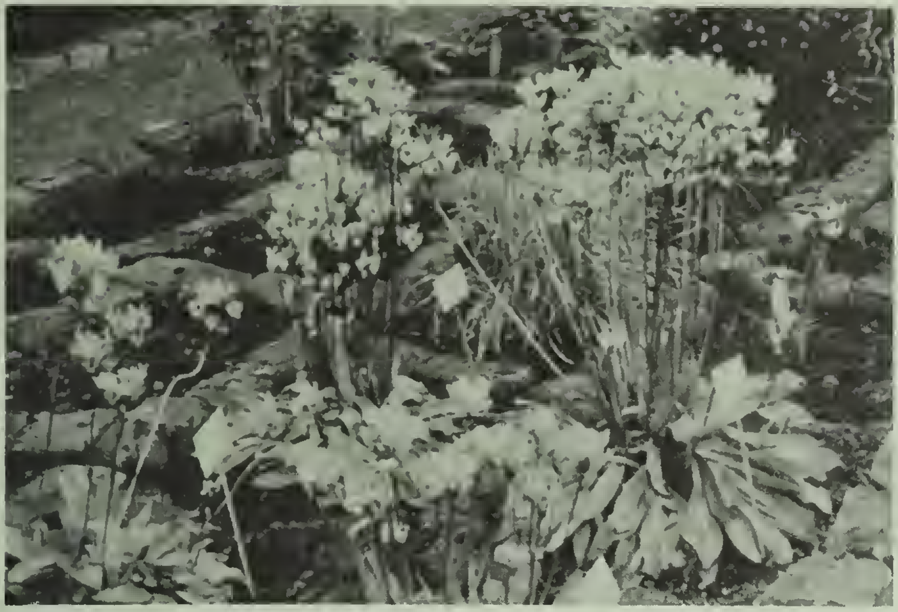

Fig. 22. *Dodecatheon* spp. in Reykjavik Botanical Garden

wort (this one *Pinguicula minor)* two species of *Saxifraga (tenuis* and *nivalis),* a minuscule gentian, which we were unabl to identify and a small brilliant blue-flowered speedwell which we thought must be *Veronica fruticans.* Closer to the shore, on gravelly banks, was the sea-side-sweet pea *(Lathyrus maritimus).* The harebell, which had been of sporadic occurrence in Iceland was here present in gorgeous clumps with often 50 or more flowers on a single plant.

On the morning of July 12 we embarked upon the Polarstar II for a cruise up the Qoroq fiord. We had seen chunks of floating ice in our own small tongue of Erik's fiord, but these paled into insignificance compared to what we now encountered as we rounded the point and headed northward toward the glacier which feeds icebergs into this fiord.

We found ourselves in an ice-pack composed of thousands of small pieces which our craft nosed gently to one side, but dominated by real icebergs, the size of a house. We kept wondering how we could possibly proceed farther, but the pilot was meticulously skillful in finding openings and avoiding collisions. (Fig. 24).

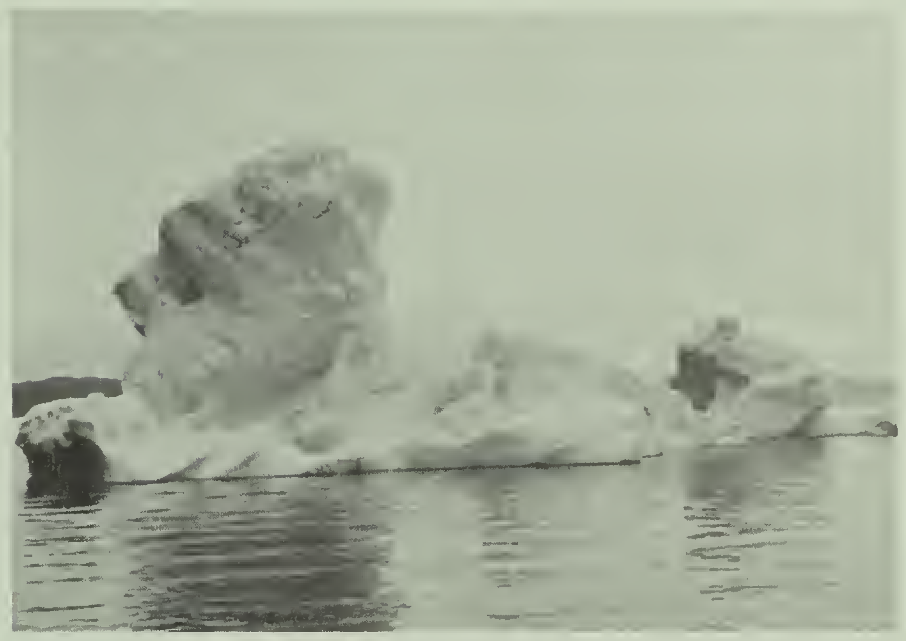

Fig. 24. Icebergs in Qoroq Fiord

We were fascinated by the various shades of blue and green in these larger bergs and by the weird shapes which they displayed. We approached the front of the glacier as far as safety permitted and then our vessel stopped while coffee and cookies were being served. At this juncture the sun emerged from the clouds and we had a superb view of the glacier and the sheer mountain faces which embrace it.

That afternoon we divided forces: the Walkers climbed far up the mountain behind the hotel and came back with *Rhododendron lapponicum,* an eyebright *(Euphrasia)* another *Rhinanthus* (probably *(R. Cristagalli),* several gentians and a new *Salix,* close to *S. cordifolia.*

I wandered along the shingle skirting the fiord and found *Dryas integrifolia, Salix uva-ursi* and *Potentilla tridentata,* all of them belonging to the flora of the Western Hemisphere, which, after all, was where we were.

The following morning we signed up for the trip across the fiord to Kagssiarssug, the site of the first church in the Western Hemisphere and the ruins dating from the time of Erik the Red and his son Leif Erikson. Unfortunately, the Polarstar developed engine trouble and the excursion had to be canceled. This was a great disappointment to us for we had been eager to visit the ruins of the first settlement in the New World.

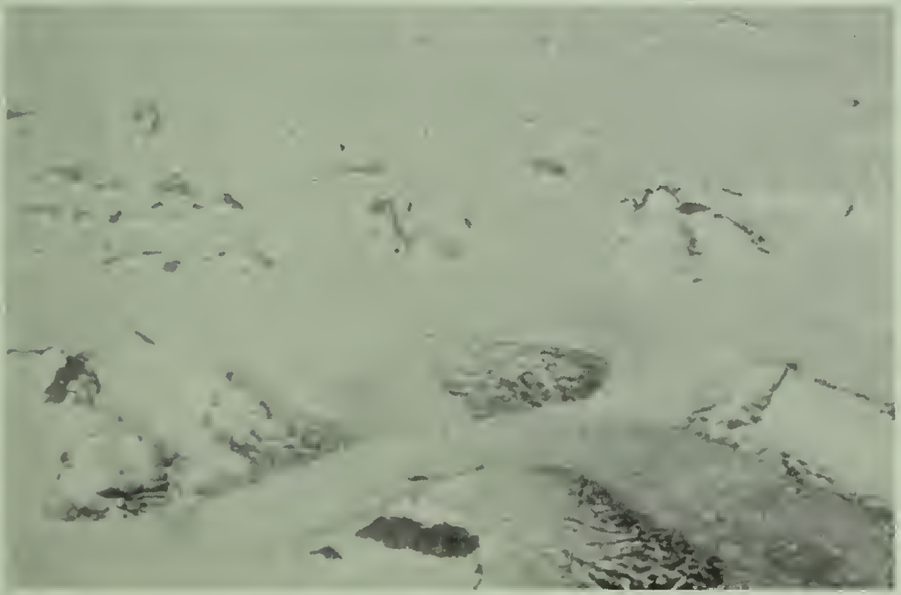

Fig. 23. Ice-cap of Greenland from plane. *Photo by Elizabeth C. Walker*

Erik the Red probably did not discover Greenland. This was apparently accomplished about the year 900 by an Icelander who was blown off his course. It was Erik, however, who established the first colony very close to where we were staying, in 981 or 982. He then returned to Iceland to recruit colonists. In order to make the country seem more attractive, it is said that he named it Greenland. He must have been among the very first real estate agents.

That afternoon we flew back to Iceland and the next day, Friday, July 14, after a final morning of shopping, returned home. The trip is one which none of us is ever likely to forget.

Flowering Date Records

ELIZABETH B. FARLEY

"When in April does your dove tree *(Davidia involucrata)* bloom?", is a telephone query from Chevy Chase, Maryland. "What is the flowering time for Rhododendron 'P.J.M.'?", asks a student whose garden club is planning an exhibit for the Philadelphia Flower show. "What week in the spring is the best time for our garden club to come see your *Magnolia* collection in bloom?" These questions are examples of the requests which the Arboretum office frequently receives for information about the flowering times of trees and shrubs here. In most cases staff members can supply answers to such inquiries by referring to the "bloom books."

In 1945 Mrs. Barnes began, in a series of loose leaf notebooks, to list the trees and shrubs planted in the Arboretum and to note their flowering dates each year. For many years after she assumed the position of Arboretum secretary, Betty Wheeler Michell kept the bloom records. This entailed on her part, frequent trips throughout the grounds in all seasons, with pencil and paper in hand, to note which plants were in flower. As time went on, however, the volume of Betty's work in the office precluded her continuing this activity. The job was then enthusiastically and devotedly taken over for a number of years by Mrs. George Frings (Marian), a former student. Marian was assisted for a short time by Mrs. Robert Barnes (Virginia), also a Barnes graduate. When Marian and Virginia had to relinquish the project, Mrs. John Harvey (Sallie), upon the completion of her course work in the Arboretum school, volunteered to carry on. In addition to her notes on the bloom periods, Sallie made a special effort to include many new specimens which have been added to the plant collection in recent years.

At the present time Mrs. John McCrea (Esther) is taking care of the bloom charts. Esther appears to have adopted as her own approach to this job the well-known motto of the postal service—"neither rain, nor snow, nor sleet . . ." Last summer in the hottest and most humid weather she faithfully traversed the grounds to check the plants. This past winter to reach all areas of the Arboretum she has had to plow through snow higher than the top of her boots.

The bloom books, so often referred to by the staff, are a valuable and important resource of the Arboretum. We wish to recognize and thank the volunteers, past and present, for the generous and faithful contribution of their time and efforts in maintaining these records.

Notes From The Arboretum

A SUPERB GIFT

In the latter half of the nineteenth century, the great English naturalist, Charles Darwin, realizing that there was no single compendium of the generic and specific names of higher plants (Gymnosperms and Angiosperms), made a very handsome gift to his friend, Sir Joseph Dalton Hooker, then Director of the Royal Botanic Gardens at Kew, for the purpose of compiling an index of all plant names which had been published since the appearance of the first edition of the *Species Plantarum* of Carl Linnaeus in 1753.

This monumental task was assigned to Dr. B. Dayton Jackson, under the direction of Dr. Hooker and as a result there appeared, between 1893 and 1895, and in two volumes, the work entitled *Index Kewensis,* which is regarded today as the cornerstone of all botanical literature.

The original two volume work has been followed, at more or less regular intervals, by supplements which have served to keep the plant taxonomist up to date with respect to the publication of the new genera and species of higher plants from all over the world.

In both the original two volumes and all of its supplements, the name of an author of a new species is given, accompanied by the place and date of publication, as well as the native country of the plant concerned. This kind of information is of inestimable value to the botanist or horticulturist who is interested in the provenance of his material.

As might well be expected, the original two volumes of *Index Kewensis* have long been out of print and there are only a few copies available for consultation in the Philadelphia area.

It was therefore with great excitement that we recently learned of the intention of Otto Koeltz Antiquariat of Koenigstein, West Germany, to bring out a facsimile edition of this basic botanical work and its first two supplements.

Unfortunately, the cost of this monumental reprint far exceeded the amount of our current budget for books for the Arboretum library. Somehow, however, the Arboretum class of 1978 learned of our predicament and when our final meeting of their three-year term was held at Ker Feal on May 4th the director of the Arboretum was presented with a check which well covered the cost of these precious works.

The first two volumes (2600 pages) have arrived, have been catalogued by our librarian, Elizabeth Farley, and now occupy an honored place on the shelves of our library with the inscription, "Presented to the Arboretum Library by the Class of 1978."

It is impossible to find words to express our appreciation of the generosity of the members of this class, who have enabled us to acquire a reference work of such vital and fundamental importance.

THE STAFF

Mrs. Farley represented the Arboretum at the 1978 Annual Meeting of the American Association of Botanical Gardens and Arboreta, which was held at the Royal Botanical Gardens, Hamilton, Ontario, May 27-28.

Mrs. Hopkins will lead trips to the hill towns of Umbria and Tuscany in Italy next May and October. The trips will offer an unusual opportunity to see villas and gardens rarely open to the public. This summer she has conducted two trips to Scotland in addition to lecturing in various resort spots including the East Hampton Garden Club on the History of English Gardening. Her son, John Jr., who has just graduated from the Hill School, is having a wonderful experience working at Ker Feal for the summer.

Dr. List is continuing his research at the Wharton tract near the Mullica River in New Jersey, for the Dept. of Environmental Protection; a quantitative study of succession in burned areas. He is also doing a survey of small mammals with the help of two graduate students and is continuing work on a book on the nature of the Pine Barrens, sometimes getting up at 5 a.m. to capture the changing light.

Dr. Marks' summer lecture tour took him as far west as Topeka, Kansas, where he made a guest appearance on WJBW-TV, Topeka. He presently is finishing his paper on the work of Hans Fruhstarfer, the Swiss-German entomologist who published over one thousand papers and named more than 900 new forms of *Papilio.* This is in connection with the meeting of the Society of the Bibliography of Natural History to be held in London.

On May 2 Dr. Fogg spoke to the Germantown Horticultural Society on ''Heaths, Heathers and their Relatives.''

KER FEAL

Gar Reed is performing miracles at Ker Feal. The Alumnae group in October will notice a vast difference in the grounds, performed by this young man who intimately knew Dr. and Mrs. Barnes as a child and now is motivated to restore house and grounds to the charm that existed there during their lifetime. He has designed a most unusual herb garden and filled it with rarities, largely from his mother, Joanna Reed's, garden. The quarry too has a new look. Gar has designed and installed broad, generous steps adding not only to the charm of the area but greatly facilitating its accessibility. In the house, be sure to notice his massive arrangements of wild flowers, executed with taste and talent. All of us are indeed lucky to have an individual of such energy, interest and ability watching over Ker Feal.

M.B.H.

The Genus Alnus in The Middle States Area

JOHN M. FOGG, JR.

The genus *Alnus* of the Corylaceae (Betulaceae) contains about 30 species of deciduous shrubs and trees found mostly in the northern hemisphere with an extension southward along the Andes into Peru and with representatives in Assam and Indochina.

As is the case with most other members of this family, the male flowers are borne in pendulous aments made up of a large number of bracts, each of which supports the staminate flowers.

The female flowers are produced in narrow upright aments, each bract of which subtends two flowers.

The fruit is a minute winged nutlet borne in the axil of the persistent bract which becomes woody, the entire ament forming at maturity an ellipsoid cone-like structure. (Fig. 1).

Known commonly as alder, the genus is represented in the Middle States area by four native species (with several varieties) and two introduced ones from the Old World, which have become locally established.

Chief among the latter group is *A. glutinosa,* the black alder of Europe, a tree up to 30 or 35 m. (although usually somewhat lower with us). The young branchlets and expanding leaves are rather viscous (whence the specific name) and the species has now spread from cultivation and is locally naturalized from Newfoundland south to Delaware and Pennsylvania. There is a colony of it along the Wissahickon Creek in Philadelphia County, close to what may well have been the site of one of the earliest botanical gardens (that of the Pietists) founded in North America.

Less frequently met with is the white alder of Europe *(A. incana),* in which the ovate, doubly-toothed leaves are conspiculously whitened on the lower surface. This is an occasional escape from cultivation which in no sense should be confused with our speckled alder, which by some earlier authors was also called *A. incana.*

Of our native eastern species of *Alnus* the most northerly is the green alder or mountain alder *(A. crispa),* a robust shrub in which the aments come into flower at the same time as the expanding leaves, instead of much earlier or much later, as in the remaining three species. It occurs on

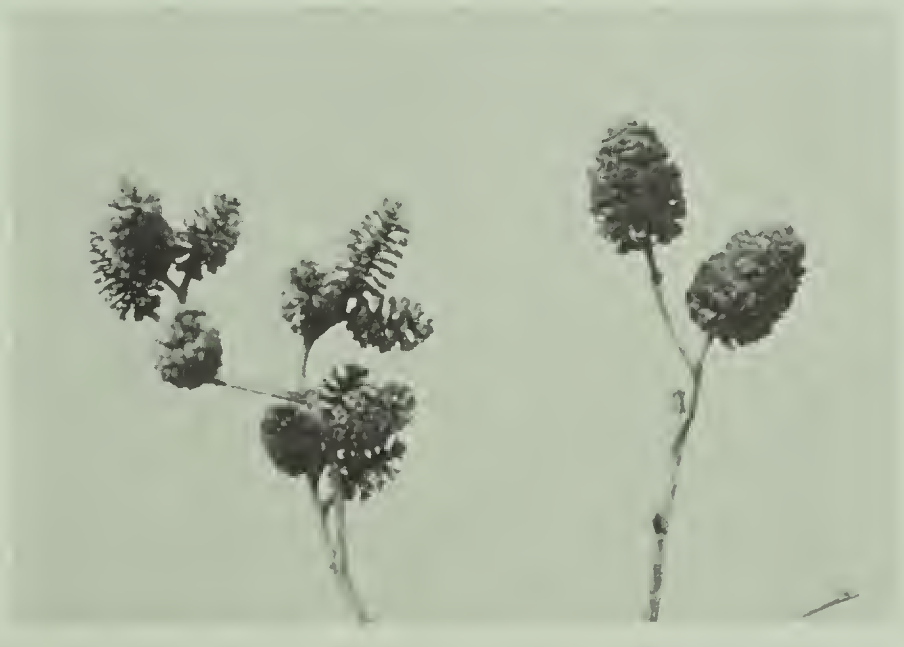

Fig. 1. *Alnus glutinosa* and *A. maritima*

mountains and upland slopes from Labrador and Newfoundland south to New England and New York to western North Carolina.

With a somewhat more southerly distribution is the speckled alder *(A. rugosa)* in which the leaves are oval or ovate, with doubly serrate margins, and only slightly glutinose beneath. This species and its variety *americana* range from Newfoundland and Nova Scotia south to the mountains of Pennsylvania, Maryland and West Virginia.

The commonest alder in the Philadelphia local area (southeastern Pennsylvania, southern New Jersey and the Piedmont of Delaware and Maryland) is *A. serrulata,* in which the leaves are usually obovate (that is, broadest at or beyond the middle) and glutinose, at least when young. Anyone who has ever attempted to press and dry this species is well aware of the manner in which the leaves tend to stick to the collecting papers.

This is the most southerly of our Eastern alders and its range is given in Gray's *Manual* as extending from Florida and Louisiana north to southern Maine, New Hampshire and Vermont. In Pennsylvania it occurs mostly in low moist situations, e.g., stream banks, bottom-lands, etc.

The rarest and in some respects the most interesting of our eastern species is the seaside alder *(A. maritima).* Unlike other alders of eastern North America, it flowers in late summer, instead of early spring, and its fruits are not matured until the following year.

Its fruiting cone-like structures are appreciably larger (1.5-2 cm thick) than those of our other species and the terminal lobes of their bracts are low and broad. (Fig. 1)

A. maritima has a rather interesting and unusual distribution. It occurs along pond shores and stream banks near the coasts of Delaware and Maryland. It was in this region that I first saw it many years ago when, with a group of students, I was visiting one of the northernmost natural habitats for the swamp or bald cypress (*Taxodium distichum*) near Laurel, in Sussex County, Delaware.

According to Dr. John P. Baumgardt, of Cassville, Missouri, the species also grows on sandbars and stream banks in southern Missouri, northern Arkansas and eastern Oklahoma.

The fact that it flowers in late summer, instead of very early spring, is perhaps its most distinguished attribute, but its reddish bark, handsome shiny leaves and large "cones," make it an ornamental and desirable shrub.

For many years I had made vain efforts to obtain this species for the Arboretum, then in the spring of 1975 the United States National Arboretum listed it as available for distribution. We sent for it at once, and soon received several fine specimens. These have flourished wonderfully and are now about 2m (6 ft.) tall. One has been planted in the recently established shrub garden (see *Newsletter,* No. 13:9, 1974) and another has a place with other members of the Corylaceae along Latchs Lane.

In late August it is interesting to observe the honey bees "working" the male aments, filling their pouches with pollen which is shed in considerable abundance. (Fig. 2).

This species, with its handsome foliage and intriguing inflorescences, has proved entirely hardy with us and is worthy of a place in every collection of shrubs in eastern temperate North America.

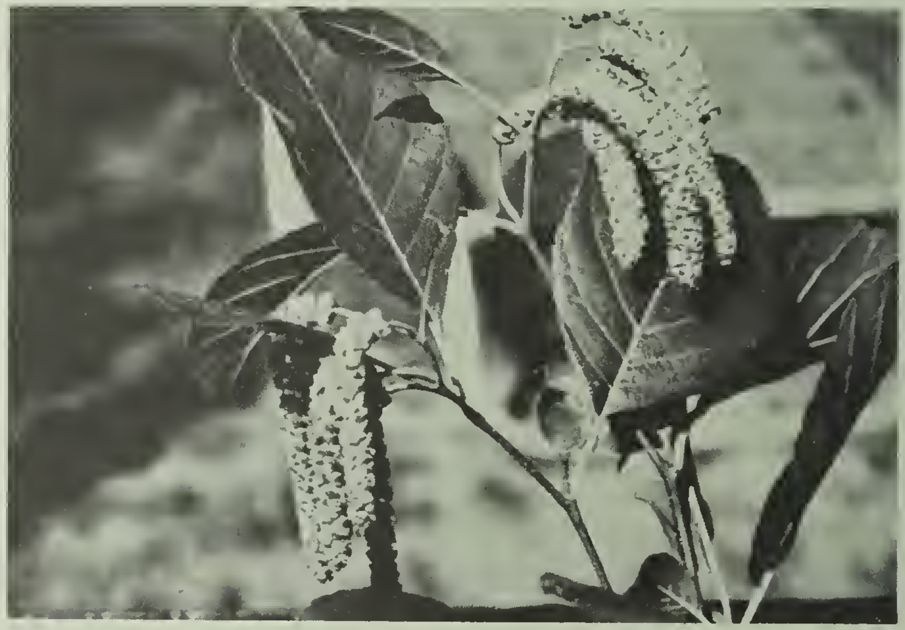

Fig. 2. *Alnus maritima.* Male catkins photographed on August 26, 1977.

David Aiken, Jr.
1911-1978

It is with deep regret that we record the death on June 27, 1978, of David Aiken, Jr. at the age of 67. David had served as a member of the arboretum staff for about 40 years and had been its superintendent during the last ten years. He was a highly competent plantsman and his services will be greatly missed.